

REMARKS

Claim Status

Claims 1, 2, 4, 6-14, 16 and 18-27 are currently pending, with claims 1 and 13 being in independent form. Dependent claims 3, 5, 15 and 17 have been canceled. Claims 1, 2, 4, 6-14, 16 and 18-24 have been amended. Independent claim 1 has been amended to incorporate the subject matter of canceled claims 3 and 5. Independent claim 13 has been amended to incorporate the subject matter of canceled claims 15 and 17. The amendments to claims 1, 2, 8-10, 13, 14, 16, 20-23 and are merely cosmetic or clarifying in nature. Dependent claims 25-27 have been added. Support for new dependent claim 27 may be found, for example, at pg. 1, lines 12-30 and pg. 5, lines 8-19 of the specification as originally filed. Additional support for the amendments to claim 13 may be found, for example, in FIGS. 2 and 3 of the specification as originally filed. No new matter has been added. Reconsideration of the application, as herein amended, is respectfully requested.

Information Disclosure Statement

Applicants filed an information disclosure statement on January 7, 1997 which cited U.S. Patent No. 5,592,183. However, the correct number of that patent is 5,592,193 to *Chen*. Consequently, Applicants have prepared and submitted herewith an information disclosure statement to have the U.S. Patent No. 5,592,193 entered into the record of the instant application. It is respectfully requested that the Examiner consider the document cited therein and indicate by a statement that the reference cited therein has been considered.

Overview of the Office Action

Claims 4-6, 11, 12, 15, 17, 18, 23 and 24 have been objected to for being in improper form. Withdrawal of these objections is in order, as explained below.

Claims 5-7 and 17-19 stand rejected under 35 U.S.C. §112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Withdrawal of this rejection is also in order, as explained below.

Claims 5-7 and 17-19 stand rejected under 35 U.S.C. §112, second paragraph, being incomplete for omitting essential steps. Withdrawal of this rejection is also in order, as explained below.

Claims 1-3, 9-11, 13-15 and 21-23 stand rejected under 35 U.S.C. §103(a) as anticipated by U.S. Patent No. 6,241,358 (“*Higuchi*”). Claims 4, 8, 16 and 20 stand rejected under 35 U.S.C. §103(a) as obvious over *Higuchi* in view of U.S. Patent No. 6,036,328 (“*Ohtsuki*”). Lastly, claims 5-7 and 17-19 stand rejected under 35 U.S.C. §103(a) as obvious over *Higuchi*.

Applicants have carefully considered the Examiner’s rejections and the comments provided in support thereof. For the following reasons, Applicants assert that all claims now presented for examination in the present application are patentable over the cited art.

Amendments Addressing Section 112 Issues and Formalities

With respect to claims 5, 6, 17 and 18, the Examiner has stated that “the claims as written lack antecedent basis for ‘the basic set’. The dependencies of the claims should be changed to claims 13 and 15, respectively”. In addition, the Examiner has stated, in claims 11 and 23, “[t]he claims as written lack antecedent basis for ‘the luminous body’ and the ‘light input part’”. With

respect to claims 4 and 15, the Examiner has stated “it is unclear how the luminous modules are in fact luminous if only some of them have light sources (LEDs)”. With respect to claims 12 and 24, the Examiner has stated that “the claims lack antecedent basis for ‘the LEDS’. Dependence of claims 8 and 20 is respectfully suggested”. Lastly, the Examiner stated that “[t]he claims are generally narrative and indefinite”. In response to each specific objection, Applicants have amended the claims in a manner which is believed to be self-explanatory.

With respect to the luminosity of the luminous modules as recited in dependent claims 4 and 16, the following is noted. It is possible for a luminous module without a light input part and a light emitting diode to be luminous. This is achieved by illuminating the module with an adjacent luminous body that comprises a light emitting diode. As described at pg. 6, lines 13-21 and pg. 10, lines 26-31 of the instant specification, a reflective coating preventing crosstalk between the luminous modules may be applied more or less at all external areas where light is not intended to pass. As a result, there is an intention to allow light to pass through a side wall to illuminate the adjacent luminous module, it is possible to not apply any reflecting coating to the area. Based on the foregoing, dependent claims 4 and 6 are clear in their present form.

Accordingly, withdrawal of these objection is therefore appropriate.

The Examiner has indicated that claims 5-7 and 17-19 are missing required steps. According to the Examiner, “[t]he omitted steps are: a method of selecting the module out of the group”. Applicants do not agree.

The group of modules, i.e. the basic set of modules, from which luminous modules are selected, enables the production of a multiplicity of different-sized lighting apparatuses in a simple, flexible way (see pg. 2, lines 29-37 of the instant specification). The sizes of the modules defined by dependent claims 6, 7, 18 and 19 are suitable embodiments for specific

applications of the lighting apparatus, for example, for backlighting conventionally sized monitors (see, e.g., pg. 5, lines 8-19 of the instant specification). Therefore, it is clear to the skilled person why a basic set of different-sized modules is provided and why the dimensions of the modules are chosen in the claimed manner.

In any event, Applicants have amended independent claim 1 to recite the step of “selecting the individual polygonal luminous modules from a basic set of different-sized luminous modules”. Independent claim 13 has been correspondingly amended. Based on the respective dependencies of claims 6-7 and 18-19 on independent claims 1 and 13, respectively, these claims now positively recite elements associated with the claimed invention. Accordingly, withdrawal of this rejection is also appropriate.

Descriptive Summary of the Prior Art

Higuchi discloses “a tandem light source device comprising a plurality of plate-like light guide blocks disposed tandem (see col. 1, lines 7-9). According to *Higuchi*, “[t]andem surface light source devices ... are applied with advantage in particular to backlighting for LCD (liquid crystal display) having a large display screen” (see col. 1, lines 9-12).

Ohtsuki discloses “a plane-shaped lighting device which achieves uniform luminance by improving the efficiency of light utilization” (see col. 7, lines 12-14).

Summary of the Subject Matter Disclosed in the Specification

The following descriptive details are based on the specification. They are provided only for the convenience of the Examiner as part of the discussion presented herein, and are not intended to argue limitations which are unclaimed.

The specification discloses a lighting apparatus and a method for producing a lighting apparatus. In accordance with the claimed method, a lighting apparatus is produced for use in homogeneously illuminating screens having a diagonal screen measurement of over 17" (see pg. 1, line 32 thru pg. 2, line 2 of the specification as originally filed).

A polygonal luminous area, e.g., a backlighting apparatus for a display, is assembled in a modular manner from a plurality of individual polygonal luminous modules (see pg. 2, lines 15-22 of the instant specification). The individual luminous modules are selected from a basic set of different-sized modules. The basic set of different-sized modules contains luminous modules in a limited number of different sizes. As a result, the assembly of a multiplicity of different-sized lighting apparatuses is permitted using luminous modules from the same basic set to produce backlighting for a multiplicity of display sizes. As a result, simplification and flexible production of the lighting apparatus is achieved at a low cost (see pg. 2, line 29-37 of the instant specification).

Patentability of Independent Claims 1 and 13 under 35 U.S.C. §102(b)

Independent claim 1 has been amended to incorporate the subject matter of dependent claims 3 and 5 (now canceled). Independent claim 13 has been amended to incorporate the subject matter of dependent claims 15 and 17 (now canceled). Thus, amended independent claims 1 and 13 are directed to a method for producing a lighting apparatus and the lighting apparatus, respectively, where the luminous modules are selected from a basic set of different-sized luminous modules and the basic set of different-sized luminous modules comprises: a first luminous module having a first size, a second luminous module having a second size, a third luminous module having a length that corresponds to the length of the first luminous module and

a width that corresponds to the width of the second luminous module, and a fourth luminous module having a length that corresponds to the width of the first luminous module and a width that corresponds to the length of the second luminous module.

Independent claim 13 has also been amended to recite “the luminous area comprises one of each of said luminous modules of the basic set of different-sized luminous modules or at least two pairs of luminous modules each having two different-sized luminous modules in the basic set of different-sized luminous modules”. Support for this limitation may be found, for example, in FIGS. 2 and 3 of the specification as originally filed. No new matter has been added.

The Examiner (at pg. 4 of the Office Action) asserts that:

Higuchi shows BL3 being shorter than BL2 in figure 4
therefore disclosing a set of different-sized modules.

For the following reasons, Applicants respectfully assert that *Higuchi* fails to teach or suggest amended independent claims 1 and 13.

Higuchi discloses light guiding blocks having a decreasing thickness, where one guide block overlaps with another guide block (col. 4, lines 41-60; FIG. 2). However, *Higuchi* fails to explicitly teach assembling different sizes of the disclosed guide blocks. That is, *Higuchi* fails to teach or suggest assembling different-sized luminous modules as defined by amended independent claims 1 and 13.

Higuchi (col. 7, lines 10-17; FIG. 4) describes an embodiment showing a plan view and side view of an outline structure of a device, where illustration of elements such as the prism sheet, the reflection member and the housing are omitted. *Higuchi* (col. 7, lines 18-19) states that “[t]he total number N of guide blocks arranged tandem is three, namely, $N=3$ ”. *Higuchi* (col. 7, lines 32 to 41) further explains that “it is important that an ingenious shaping is employed at overlapping portions where the distal portions of the guide blocks B L 1, B L 2 are encroach

upon the following guide blocks B L 2, B L 3, respectively. That is, the overlapping portions consist of tongue-like overlapping portions 17a, 17b, 27a, 27b and band-like overlapping portions 17c, 27c.” However, the tongue-like overlapping portions of blocks B L 1 and B L 2 are clearly missing from block BL3. Consequently, there is no mention whatsoever in col. 7, lines 18 to 57 in *Higuchi* of a difference in size between the guide block BL3 and the guide blocks BL1 and/or BL2 in FIG. 4. In fact, tongue-like overlapping portions are unnecessary in block BL3 because there is no overlap of this block with any other additional block that would be placed to the right-side of the arrangement depicted in FIG. 4. Therefore, the different sizes of the blocks are not related to any special selection from among a variety of different-sized blocks but, rather, merely to the terminal block BL3 that is arranged such that it does not overlap with another subsequent block.

Moreover, *Higuchi* does not disclose the selection of individual polygonal luminous modules of a basic set of different-sized luminous modules that comprises four different-sized modules, i.e., a first, a second, a third and a fourth luminous module, to assemble a luminous area in a modular manner, as now recited in amended independent claims 1 and 13. In addition, *Higuchi* fails to teach or suggest the use of four different modules, i.e., one of each of the modules or at least two pairs of different-sized modules as further defined by amended independent claim 13. Therefore, amended independent claim 1 and 13 are not anticipated by *Higuchi*.

It would also not have been obvious to the skilled person based on the teachings of *Higuchi* to select luminous modules from a basic set of different-sized luminous modules. In contrast to *Higuchi*, the claimed method recited in independent claim 1 permits the production of a multiplicity of light apparatus having different sizes in a flexible manner by selecting the

individual luminous modules from the basic set of different-sized luminous modules. By assembling together different sizes of luminous modules, many sizes of luminous areas become available and, accordingly, many sizes of displays can be backlit by such combined luminous modules (see, e.g., pg. 5, lines 8-19 of the instant specification). *Higuchi* fails to teach a method or apparatus that would capture such advantageous features.

In view of the foregoing, reconsideration and withdrawal of the rejection of claims 1 and 13 as anticipated by *Higuchi* under 35 U.S.C. §102 are requested, and a notice to that effect is earnestly solicited.

Moreover, by virtue of the above-discussed differences between the recitations of claims 1 and 13 and the teachings of *Higuchi*, and the lack of any clear motivation for modifying *Higuchi* to achieve Applicants' claimed invention, independent claims 1 and 13 are also patentable over *Higuchi* under 35 U.S.C. §103.

Patentability of Dependent Claim 5-7 and 7-19 over the Prior Art under 35 U.S.C. §103

The Examiner (at pgs. 3 thru 4 of the Office Action) acknowledged that *Higuchi* fails to teach or suggest "light modules being selected from a group of four units with the specific relative dimension claimed," as recited in dependent claims 6, 7, 18 and 19 but states that these features would have been obvious based on the teachings of *Higuchi*. Applicants disagree. There is nothing in *Higuchi* to cure the above-noted deficiencies concerning the lack of teachings of assembling different-sized luminous modules. *Higuchi* therefore fails to teach or suggest the features recited in independent claims 1 and 13, let alone in dependent claims 6, 7, 18 and 19. Dependent claims 6, 7, 18 and 19 are accordingly patentable over *Higuchi*. Reconsideration and withdrawal of the rejection of claims 4 under 35 U.S.C. §103 are requested.

Patentability of Dependent Claim 4, 8, 16 and 20 over the Prior Art under 35 U.S.C. §103

The Examiner (at pgs. 3 thru 4 of the Office Action) acknowledged that *Higuchi* fails to teach or suggest “light emitting diodes with the light input part,” as recited in dependent claims 4, 8, 16 and 20, and cites *Ohtsuki* for this feature. Applicants disagree that the combination of *Higuchi* and *Ohtsuki* teaches the claimed invention. *Ohtsuki* discloses one or more LED lamps that emit light into one light-directing plate via a light-incident surface (see Abstract; FIG. 6). However, *Ohtsuki* fails to teach or suggest anything whatsoever with respect to a light-directing plate composed of luminous modules. Consequently, there is nothing in *Ohtsuki* to cure the above-noted deficiencies concerning the lack of teachings of assembling different-sized luminous modules. The combination of *Higuchi* and *Ohtsuki* therefore fails to teach or suggest the features recited in independent claims 1 and 13, let alone in dependent claims 4, 8, 16 and 20. Dependent claim 4, 8, 16 and 20 are, accordingly, patentable over *Higuchi* and *Ohtsuki*. Reconsideration and withdrawal of the rejection of claims 4, 8, 16 and 20 under 35 U.S.C. §103 are requested.

Dependent Claims

In view of the patentability of independent claims 1 and 13, for the reasons presented above, each of dependent claims 2, 4, 6-14, 16 and 18-24, as well as new dependent claims 25-27 is patentable therewith. Moreover, each of these claims includes features which serve to even more clearly distinguish the invention over the applied references.

For example, new independent claim 27 is directed to a display that is illuminated by a lighting apparatus, where the lighting apparatus comprises a luminous area that corresponds in size to the size of the display. Such a claimed feature permits creation of lighting apparatus to illuminate

displays, where the size of the lighting apparatus can be flexibly adapted to different sizes of displays (see, i.e., at pg. 1, lines 12-30 and pg. 5, lines 8-19 of the instant specification). The cited art fails to teach or suggest a method or apparatus that would capture such an advantageous feature.

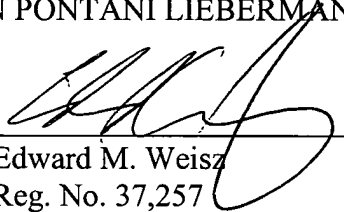
Conclusion

Based on all of the above, it is respectfully submitted that the present application is now in proper condition for allowance. Prompt and favorable action to this effect and early passing of this application to issue are respectfully solicited.

Should the Examiner have any comments, questions, suggestions or objections, the Examiner is respectfully requested to telephone the undersigned in order to facilitate reaching a resolution of any outstanding issues.

Respectfully submitted,
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